

**SECTION 08 71 00**  
**DOOR HARDWARE (REVISED AD-1)**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. Door hardware and related items necessary for complete installation and operation of doors.

**1.2 RELATED WORK**

- A. General Requirements: 01 00 00 GENERAL REQUIREMENTS
- B. Caulking: Section 07 92 00 JOINT SEALANTS.
- C. Application of Hardware: Section 08 14 00, INTERIOR WOOD DOORS Section 08 11 13, HOLLOW METAL DOORS AND FRAMES; Section 08 41 13, ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS; Section 08 33 00, COILING DOORS AND GRILLES; ; Section 08 71 13, AUTOMATIC DOOR OPERATORS; Section 10 26 00, WALL AND DOOR PROTECTION SECTION; SECTION 32 31 13, CHAIN LINK FENCES AND GATES
- D. Painting: Section 09 91 00, PAINTING.
- E. Card Readers: Section 28 13 16, ACCESS CONTROL SYSTEM AND DATABASE MANAGEMENT.
- F. Electrical: Division 26, ELECTRICAL.
- G. Fire Detection: Section 28 31 00, FIRE DETECTION AND ALARM.

**1.3 GENERAL**

- A. All hardware shall comply with UFAS, (Uniform Federal Accessible Standards) unless specified otherwise.
- B. Provide rated door hardware assemblies where required by most current version of the International Building Code & National Fire Prevention Association's Life Safety Code 101International (NFPA & IBC).
- C. Hardware for Labeled Fire Doors and Exit Doors: Conform to requirements of NFPA 80 for labeled fire doors and to NFPA 101 for exit doors, as well as to other requirements specified. Provide hardware listed by UL, except where heavier materials, large size, or better grades are specified herein under paragraph HARDWARE SETS. In lieu of UL labeling and listing, test reports from a nationally recognized testing agency may be submitted showing that hardware has been tested in accordance with UL test methods and that it conforms to NFPA requirements.
- D. Hardware for application on metal and wood doors and frames shall be made to standard templates. Furnish templates to the fabricator of these items in sufficient time so as not to delay the construction.
- E. The following items shall be of the same manufacturer, if possible, except as otherwise specified:
1. Mortise locksets.
  2. Hinges for hollow metal and wood doors.
  3. Surface applied overhead door closers.
  4. Exit devices.

#### 1.4 WARRANTY

- A. Automatic door operators shall be subject to the terms of FAR Clause 52.24-21, except that the Warranty period shall be two years in lieu of one year for all items except as noted below:
1. Locks, latchsets, and panic hardware: 5 years.
  2. Door closers and continuous hinges: 10 years.

#### 1.5 MAINTENANCE MANUALS

- A. In accordance with Section 01 00 00, GENERAL REQUIREMENTS Article titled "INSTRUCTIONS", furnish maintenance manuals and instructions on all door hardware.

#### 1.6 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES. Submit 6 copies of the schedule per Section 01 33 23 plus 2 copies to the VAHCS Locksmith (VISN Locksmith if the VAHCS does not have a locksmith).

- B. Hardware Schedule: Prepare and submit hardware schedule in the following form:

| Hardware Item | Quantity | Size | Reference Publication Type No. | Finish | Mfr. Name and Catalog No. | Key Control Symbols | UL Mark (if fire rated and listed) | ANSI/BHMA Finish Designation |
|---------------|----------|------|--------------------------------|--------|---------------------------|---------------------|------------------------------------|------------------------------|
|               |          |      |                                |        |                           |                     |                                    |                              |
|               |          |      |                                |        |                           |                     |                                    |                              |
|               |          |      |                                |        |                           |                     |                                    |                              |

- C. Samples and Manufacturers' Literature:
1. Samples: All hardware items (proposed for the project) that have not been previously approved by Builders Hardware Manufacturers Association shall be submitted for approval. Tag and mark all items with manufacturer's name, catalog number and project number.
  2. Samples are not required for hardware listed in the specifications by manufacturer's catalog number, if the contractor proposes to use the manufacturer's product specified.
- D. Certificate of Compliance and Test Reports: Submit certificates that hardware conforms to the requirements specified herein. Certificates shall be accompanied by copies of reports as referenced. The testing shall have been conducted either in the manufacturer's plant and certified by an independent testing laboratory or conducted in an independent laboratory, within four years of submittal of reports for approval.

#### 1.7 DELIVERY AND MARKING

- A. Deliver items of hardware to job site in their original containers, complete with necessary appurtenances including screws, keys, and instructions. Tag one of each different item of hardware and deliver to COR for reference purposes. Tag shall identify items by Project Specification number and manufacturer's catalog number. These items shall remain on file in COR's office until all other similar items have been installed in project, at which time the COR will deliver items on file to Contractor for installation in predetermined locations on the project.

#### 1.8 PREINSTALLATION MEETING

- A. Convene a preinstallation meeting not less than 30 days before start of installation of door hardware. Require attendance of parties directly affecting work of this section, including Contractor and Installer, Architect, Project Engineer and VA Locksmith, Hardware Consultant, and Hardware Manufacturer's Representative. Review the following:
1. Inspection of door hardware.
  2. Job and surface readiness.
  3. Coordination with other work.

4. Protection of hardware surfaces.
5. Substrate surface protection.
6. Installation.
7. Adjusting.
8. Repair.
9. Field quality control.
10. Cleaning.

## 1.9 INSTRUCTIONS

- A. Hardware Set Symbols on Drawings: Except for protective plates, door stops, mates, thresholds and the like specified herein, hardware requirements for each door are indicated on drawings by symbols. Symbols for hardware sets consist of letters (e.g., "HW") followed by a number. Each number designates a set of hardware items applicable to a door type.
- B. Manufacturers' Catalog Number References: Where manufacturers' products are specified herein, products of other manufacturers which are considered equivalent to those specified may be used. Manufacturers whose products are specified are identified by abbreviations as follows:

|                 |   |                   |
|-----------------|---|-------------------|
| Adams-Rite      | Adams Rite Mfg. Co.                     | Pomona, CA        |
| Best            | Best Access Systems                     | Indianapolis, IN  |
| Don-Jo          | Don-Jo Manufacturing                    | Sterling, MA      |
| G.E. Security   | GE Security, Inc.                       | Bradentown, FL    |
| Markar          | Markar Architectural Products           | Pomona, CA        |
| Nat'l GRD       | National Guard Products                 | Memphis, TN       |
| Pemko           | Pemko Manufacturing Co.                 | Ventura, CA       |
| Rixson          | Rixson                                  | Franklin Park, IL |
| Rockwood        | Rockwood Manufacturing Co.              | Rockwood, PA      |
| Seal-eze        | Jason Incorporated                      | Richmond, VA      |
| Securitron      | Securitron Magnalock Corp.              | Sparks, NV        |
| Southern Folger | Southern Folger Detention Equipment Co. | San Antonio, TX   |
| Stanley         | The Stanley Works                       | New Britain, CT   |
| Tice            | Tice Industries                         | Portland, OR      |
| Trimco          | Triangle Brass Mfg. Co.                 | Los Angeles, CA   |
| Zero            | Zero Weather Stripping Co.              | New York, NY      |

- C. Keying: All cylinders shall be keyed into existing BEST 7pin TE-keyway Great Grand Master Key System. Provide removable core cylinders that are removable only with a special key or tool without disassembly of knob or lockset. Cylinders shall be 7pin TE-keyway type. Keying information shall be furnished at a later date by the COR.
- D. Contractor shall turn over all permanent cores to the VA locksmith for permanent installation.

## 1.10 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only. In text, hardware items are referred to by series, types, etc., listed in such specifications and standards, except as otherwise specified.
- B. American Society for Testing and Materials (ASTM):
- |          |  |
|----------|--|
| F883-04  | Padlocks   |
| E2180-07 | Standard Test Method for Determining the Activity of Incorporated Antimicrobial Agent(s) In Polymeric or Hydrophobic Materials |
- C. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA):
- |           |   |
|-----------|---|
| A156.1-06 | Butts and Hinges                          |
| A156.2-03 | Bored and Pre-assembled Locks and Latches |

|            |  |
|------------|--|
| A156.3-08  | Exit Devices, Coordinators, and Auto Flush Bolts                     |
| A156.4-08  | Door Controls (Closers)  |
| A156.5-01  | Auxiliary Locks and Associated Products                              |
| A156.6-05  | Architectural Door Trim  |
| A156.8-05  | Door Controls-Overhead Stops and Holders                             |
| A156.12-05 | Interconnected Locks and Latches                                     |
| A156.13-05 | Mortise Locks and Latches Series 1000                                |
| A156.15-06 | Release Devices-Closer Holder, Electromagnetic and Electromechanical |
| A156.16-08 | Auxiliary Hardware   |
| A156.17-04 | Self-Closing Hinges and Pivots                                       |
| A156.18-06 | Materials and Finishes   |
| A156.20-06 | Strap and Tee Hinges, and Hasps                                      |
| A156.21-09 | Thresholds   |
| A156.22-05 | Door Gasketing and Edge Seal Systems                                 |
| A156.23-04 | Electromagnetic Locks  |
| A156.24-03 | Delayed Egress Locking Systems                                       |
| A156.25-07 | Electrified Locking Devices  |
| A156.26-06 | Continuous Hinges  |
| A156.28-07 | Master Keying Systems  |
| A156.29-07 | Exit Locks and Alarms  |
| A156.30-03 | High Security Cylinders  |
| A156.31-07 | Electric Strikes and Frame Mounted Actuators                         |
| A250.8-03  | Standard Steel Doors and Frames                                      |

D. National Fire Protection Association (NFPA):

|        |                             |
|--------|-----------------------------|
| 80-10  | Fire Doors and Fire Windows |
| 101-09 | Life Safety Code            |

E. Underwriters Laboratories, Inc. (UL): Building Materials Directory (2008)

## PART 2 - PRODUCTS

### 2.1 BUTT HINGES

- A. ANSI A156.1. Provide only three-knuckle hinges, except five-knuckle where the required hinge type is not available in a three-knuckle version (e.g., some types of swing-clear hinges). The following types of butt hinges shall be used for the types of doors listed, except where otherwise specified:
1. Exterior Doors: Type A2112/A5112 for doors 900 mm (3 feet) wide or less and Type A2111/A5111 for doors over 900 mm (3 feet) wide. Hinges for exterior outswing doors shall have non-removable pins. Hinges for exterior fire-rated doors shall be of stainless steel material.
  2. Interior Doors: Type A8112/A5112 for doors 900 mm (3 feet) wide or less and Type A8111/A5111 for doors over 900 mm (3 feet) wide. Hinges for doors exposed to high humidity areas (shower rooms, toilet rooms, kitchens, janitor rooms, etc. shall be of stainless steel material.
- B. Provide quantity and size of hinges per door leaf as follows:
1. Doors up to 1210 mm (4 feet) high: 2 hinges.
  2. Doors 1210 mm (4 feet) to 2260 mm (7 feet 5 inches) high: 3 hinges minimum.
  3. Doors greater than 2260 mm (7 feet 5 inches) high: 4 hinges.
  4. Doors up to 900 mm (3 feet) wide, standard weight: 114 mm x 114 mm (4-1/2 inches x 4-1/2 inches) hinges.

5. Doors over 900 mm (3 feet) to 1065 mm (3 feet 6 inches) wide, standard weight: 127 mm x 114 mm (5 inches x 4-1/2 inches).
6. Doors over 1065 mm (3 feet 6 inches) to 1210 mm (4 feet), heavy weight: 127 mm x 114 mm (5 inches x 4-1/2 inches).
7. Provide heavy-weight hinges where specified.
8. At doors weighing 330 kg (150 lbs.) or more, furnish 127 mm (5 inch) high hinges.

## **2.2 DOOR CLOSING DEVICES**

- A. Closing devices shall be products of one manufacturer.

## **2.3 OVERHEAD CLOSERS**

- A. Conform to ANSI A156.4, Grade 1.
- B. Closers shall conform to the following:
  1. The closer shall have minimum 50 percent adjustable closing force over minimum value for that closer and have adjustable hydraulic back check effective between 60 degrees and 85 degrees of door opening.
  2. Where specified, closer shall have hold-open feature.
  3. Size Requirements: Provide multi-size closers, sizes 1 through 6, except where multi-size closer is not available for the required application.
  4. Material of closer body shall be forged or cast.
  5. Arm and brackets for closers shall be steel, malleable iron or high strength ductile cast iron.
  6. Where closers are exposed to the exterior or are mounted in rooms that experience high humidity, provide closer body and arm assembly of stainless steel material.
  7. Closers shall have full size metal cover; plastic covers will not be accepted.
  8. Closers shall have adjustable hydraulic back-check, separate valves for closing and latching speed, adjustable back-check positioning valve, and adjustable delayed action valve.
  9. Provide closers with any accessories required for the mounting application, including (but not limited to) drop plates, special soffit plates, spacers for heavy-duty parallel arm fifth screws, bull-nose or other regular arm brackets, longer or shorter arm assemblies, and special factory templating. Provide special arms, drop plates, and templating as needed to allow mounting at doors with overhead stops and/or holders.
  10. Closer arms or backcheck valve shall not be used to stop the door from overswing, except in applications where a separate wall, floor, or overhead stop cannot be used.
  11. Provide parallel arm closers with heavy duty rigid arm.
  12. Where closers are to be installed on the push side of the door, provide parallel arm type except where conditions require use of top jamb arm.
  13. Provide all surface closers with the same body attachment screw pattern for ease of replacement and maintenance.
  14. All closers shall have a 1 1/2" (38mm) minimum piston diameter.
  15. Acceptable Manufacturers:
    - a. LCN                      Model: 4041
    - b. Norton                Model: 7500
    - c. Yale                    Model: 4400

## 2.4 FLOOR CLOSERS AND FLOOR PIVOT SETS

- A. Comply with ANSI A156.4. Provide stainless steel floor plates for floor closers and floor pivots, except where metal thresholds occur. Provide cement case for all floor closers. Floor closers specified for fire doors shall comply with Underwriters Laboratories, Inc., requirements for concealed type floor closers for classes of fire doors indicated on drawings. Hold-open mechanism, where required, shall engage when door is opened 105 degrees, except when door swing is limited by building construction or equipment, the hold-open feature shall engage when door is opened approximately 90 degrees. The hold-open mechanism shall be selectable on/off by turning a screw through the floor plate. Floor closers shall have adjustable hydraulic back-check, adjustable close speed, and adjustable latch speed. Provide closers with delayed action where a hold-open mechanism is not required. Floor closers shall be multi-sized. Single acting floor closers shall also have built in dead stop. Where required, provide closers with special cement cases appropriate for shallow deck installation or where concrete joint lines run through the floor blockout. At offset-hung doors installed in deep reveals, provide special closer arm and spindle to allow for installation. Where stone or terrazzo is applied over the floor closer case, provide closer without floor plate and with extended spindle (length as required) and special cover pan (depth as required) to allow closer to be accessed without damaging the material applied over the closer. Pivots for non-labeled doors shall be cast, forged or extruded brass or bronze.
- B. Where floor closer appears in hardware set provide the following as applicable.
1. Double Acting Floor Closers: Type C06012.
  2. Single Acting Floor Closer: Type C06021 (center pivoted). (Intermediate pivot is not required).
  3. Single Acting Floor Closers: Type C06041 (offset pivoted).
  4. Single Acting Floor Closer for Labeled Fire Doors: Type C06051 (offset pivoted).
  5. Single Acting Floor Closers For Lead Lined Doors: Type C06071 (offset pivoted).

## 2.5 DOOR STOPS

- A. Conform to ANSI A156.16.
- B. Provide door stops wherever an opened door or any item of hardware thereon would strike a wall, column, equipment or other parts of building construction. For concrete, masonry or quarry tile construction, use lead expansion shields for mounting door stops.
- C. Where cylindrical locks with turn pieces or pushbuttons occur, equip wall bumpers Type L02251 (rubber pads having concave face) to receive turn piece or button.
- D. Provide stop Type L02011, as applicable for exterior doors. At outswing doors where stop can be installed in concrete, provide stop mated to concrete anchor set in 76mm (3-inch) core-drilled hole and filled with quick-setting cement.
- E. Provide appropriate roller bumper for each set of doors (except where closet doors occur) where two doors would interfere with each other in swinging.
- F. Provide appropriate door mounted stop on doors in individual toilets where wall mounted stops cannot be used.
- G. Provide overhead surface applied stop Type C02541, ANSI A156.8 on patient toilet doors in bedrooms where toilet door could come in contact with the bedroom door.
- H. Provide door stops on doors where combination closer magnetic holders are specified, except where wall stops cannot be used or where floor stops cannot be installed within 4-inches of the wall.
- I. Where the specified wall cannot be used, provide concealed overhead stops (surface-mounted where concealed cannot be used).

## 2.6 OVERHEAD DOOR STOPS AND HOLDERS

- A. Conform to ANSI Standard A156.8. Overhead holders shall be of sizes recommended by holder manufacturer for each width of door. Set overhead holders for 110 degree opening, unless limited by building construction or equipment. Provide Grade 1 overhead concealed slide type: stop-only at rated doors and security doors, hold-open type with exposed hold-open on/off control at all other doors requiring overhead door stops.

## 2.7 LOCKS AND LATCHES

- A. Conform to ANSI A156.2. Locks and latches for doors 45 mm (1-3/4 inch) thick or over shall have beveled fronts. Lock cylinders shall have not less than seven pins. Cylinders for all locksets shall be removable core type. Cylinders shall be able to accommodate construction removable cores and construction master keys. Construction removable cores and construction master keys to be furnished by the VA Locksmith. Cylinder shall be removable by special key or tool. Construct all cores so that they will be interchangeable into the core housings of all mortise locks, rim locks, cylindrical locks, and any other type lock included in the Great Grand Master Key System. Disassembly of lever or lockset shall not be required to remove core from lockset. All locksets or latches on double doors with fire label shall have latch bolt with 19 mm (3/4 inch) throw, unless shorter throw allowed by the door manufacturer's fire label. Provide temporary keying device or construction core of allow opening and closing during construction and prior to the installation of final cores.

- B. In addition to above requirements, locks and latches shall comply with following requirements:

### AD-1: REVISE PARAGRAPH

- 1. Mortise Lock and Latch Sets: Conform to ANSI/BHMA A156.13. Mortise locksets shall be series 1000, minimum Grade 2. All locksets and latchsets, except on designated doors in Psychiatric (Mental Health) areas, shall have lever handles fabricated from cast stainless steel. Provide sectional (lever x rose) ~~lever design matching~~ Corbin Russwin Mortise Locks ML2000 Series, design: LWA. No substitute ~~lever material shall be manufacture nor design will be~~ accepted. All locks and latchsets shall be furnished with 122.55 mm (4-7/8-inch) curved lip strike and wrought box. At outswing pairs with overlapping astragals, provide flat lip strip with 21mm (7/8-inch) lip-to-center dimension. Lock function F02 shall be furnished with emergency tools/keys for emergency entrance. All lock cases installed on lead lined doors shall be lead lined before applying final hardware finish. Furnish armored fronts for all mortise locks. Where mortise locks are installed in high-humidity locations or where exposed to the exterior on both sides of the opening, provide non-ferrous mortise lock case.

### AD-1: OMIT PARAGRAPH

- ~~2. Cylindrical Lock and Latch Sets: levers shall meet ADA (Americans with Disabilities Act) requirements. Cylindrical locksets shall be series 4000 Grade I. All locks and latchsets shall be furnished with 122.55 mm (4 7/8 inch) curved lip strike and wrought box. At outswing pairs with overlapping astragals, provide flat lip strip with 21mm (7/8 inch) lip to center dimension. Provide lever design to match design selected by Architect or to match existing lever design. Where two turn pieces are specified for lock F76, turn piece on inside knob shall lock and unlock inside knob, and turn piece on outside knob shall unlock outside knob when inside knob is in the locked position. (This function is intended to allow emergency entry into these rooms without an emergency key or any special tool.)~~
- 3. Auxiliary locks shall be as specified under hardware sets and conform to ANSI A156.5.
- 4. Locks on designated doors in Psychiatric (Mental Health) areas shall be paddle type with arrow projection covers and be UL Listed. Provide these locks with paddle in the down position on both sides of the door. Locks shall be fabricated of wrought stainless steel.

5. Privacy locks in non-mental-health patient rooms shall have an inside thumbturn for privacy and an outside thumbturn for emergency entrance. Single occupancy patient privacy doors shall typically swing out; where such doors cannot swing out, provide center-pivoted doors with rescue hardware (see HW-2B).

## 2.8 PUSH-BUTTON COMBINATION LOCKS

- A. ANSI/BHMA A156.13, Grade 1. Battery operated pushbutton entry.
- B. Construction: Heavy duty mortise lock housing conforming to ANSI/BHMA A156.13, Grade 1. Lever handles and operating components in compliance with the UFAS and the ADA Accessibility Guidelines. Match lever handles of locks and latchsets on adjacent doors.
- C. Special Features: Key override to permit a master keyed security system and a pushbutton security code activated passage feature to allow access without using the entry code.

## 2.9 DELAYED-EGRESS LOCKS:

- A. BHMA A156.24. Listed under Category G in BHMA's "Certified Product Directory".
  1. Means of Egress Doors: Lock releases within 15 seconds after applying a force not more than 15 lbf (67 N) for not more than 3 seconds, as required by NFPA 101.
  2. Security Grade: Activated from secure side of door by initiating device.
  3. Movement Grade: Activated by door movement as initiating device.
  4. The lock housing shall not project more than 4-inches (101mm) from the underside of the frame head stop.

## 2.10 ELECTRIC STRIKES

- A. ANSI/ BHMA A156.31 Grade 1.
- B. General: Use fail-secure electric strikes at fire-rated doors.

## 2.11 KEYS

- A. Stamp all keys with change number and key set symbol. Turn all keys, key blanks, and change keys over to COR. Furnish keys in quantities as follows:

| Locks/Keys                      | Quantity                   |
|---------------------------------|----------------------------|
| Cylinder locks                  | 2 key blanks each          |
| Cylinder lock change key blanks | 100 each different key way |
| Control key                     | 2 keys                     |

## 2.12 ARMOR PLATES, KICK PLATES, MOP PLATES AND DOOR EDGING

- A. Conform to ANSI Standard A156.6.
- B. Provide protective plates as specified below:
  1. Kick plates, mop plates and armor plates of metal, Type J100 series.
  2. Provide kick plates and mop plates where specified. Kick plates shall be 305 mm (12 inches) high. Mop plates shall be 152 mm (6 inches) high. Both kick and mop plates shall be minimum 1.27 mm (0.050 inches) thick. Provide kick and mop plates beveled on all 4 edges (B4E). On push side of doors where jamb stop extends to floor, make kick plates 38 mm (1-1/2 inches) less than width of door, except pairs of metal doors which shall have plates 25 mm (1 inch) less than width of each door. Extend all other kick and mop plates to within 6 mm (1/4 inch) of each edge of doors. Kick and mop plates shall butt astragals. For jamb stop requirements, see specification sections pertaining to door frames.
  3. Kick plates and/or mop plates are not required on following door sides:
    - a. Armor plate side of doors;
    - b. Exterior side of exterior doors;



- c. Closet side of closet doors;
- d. Both sides of aluminum entrance doors.
- 4. Armor plates for doors are listed under Article "Hardware Sets". Armor plates shall be thickness as noted in the hardware set, 875 mm (35 inches) high and 38 mm (1-1/2 inches) less than width of doors, except on pairs of metal doors. Provide armor plates beveled on all 4 edges (B4E). Plates on pairs of metal doors shall be 25 mm (1 inch) less than width of each door. Where top of intermediate rail of door is less than 875 mm (35 inches) from door bottom, extend armor plates to within 13 mm (1/2 inch) of top of intermediate rail. On doors equipped with panic devices, extend armor plates to within 13 mm (1/2 inch) of panic bolt push bar.
- 5. Where louver or grille occurs in lower portion of doors, substitute stretcher plate and kick plate in place of armor plate. Size of stretcher plate and kick plate shall be 254 mm (10 inches) high.
- 6. Provide stainless steel edge guards where so specified at wood doors. Provide mortised type instead of surface type except where door construction and/or ratings will not allow. Provide edge guards of bevel and thickness to match wood door. Provide edge guards with factory cut-outs for door hardware that must be installed through or extend through the edge guard. Provide full-height edge guards except where door rating does not allow; in such cases, provide edge guards to height of bottom of typical lockset armor front. Forward edge guards to wood door manufacturer for factory installation on doors.

C. Provide protective plates as specified in Section 10 26 00 Wall and Door Protection

## **2.13 EXIT DEVICES**

- A. Conform to ANSI Standard A156.3. Exit devices shall be Grade 1; type and function are specified in hardware sets. Provide flush with finished floor strikes for vertical rod exit devices in interior of building. Trim shall have cast satin stainless steel lever handles of design similar to locksets, unless otherwise specified. Provide key cylinders for keyed operating trim and, where specified, cylinder dogging.
- B. Surface vertical rod panics shall only be provided less bottom rod; provide fire pins as required by exit device and door fire labels. Do not provide surface vertical rod panics at exterior doors.
- C. Concealed vertical rod panics shall be provided less bottom rod at interior doors, unless lockable or otherwise specified; provide fire pins as required by exit device and door fire labels. Where concealed vertical rod panics are specified at exterior doors, provide with both top and bottom rods.
- D. Where removable mullions are specified at pairs with rim panic devices, provide mullion with key-removable feature.
- E. At non-rated openings with panic hardware, provide panic hardware with key cylinder dogging feature.
- F. Exit devices for fire doors shall comply with Underwriters Laboratories, Inc., requirements for Fire Exit Hardware. Submit proof of compliance.
- G. Acceptable Manufacturers:
  - 1. Von Duprin 98/99 Series

## **2.14 FLUSH BOLTS (LEVER EXTENSION)**

- A. Conform to ANSI A156.16. Flush bolts shall be Type L24081 unless otherwise specified. Furnish proper dustproof strikes conforming to ANSI A156.16, for flush bolts required on lower part of doors.
- B. Lever extension manual flush bolts shall only be used at non-fire-rated pairs for rooms only accessed by maintenance personnel.

- C. Face plates for cylindrical strikes shall be rectangular and not less than 25 mm by 63 mm (1 inch by 2-1/2 inches).
- D. Friction-fit cylindrical dustproof strikes with circular face plate may be used only where metal thresholds occur.
- E. Provide extension rods for top bolt where door height exceeds 2184 mm (7 feet 2 inches).

## **2.15 FLUSH BOLTS (AUTOMATIC)**

- A. Conform to ANSI A156.3. Dimension of flush bolts shall conform to ANSI A115. Bolts shall conform to Underwriters Laboratories, Inc., requirements for fire door hardware. Flush bolts shall automatically latch and unlatch. Furnish dustproof strikes conforming to ANSI A156.16 for bottom flushbolt. Face plates for dustproof strike shall be rectangular and not less than 38 mm by 90 mm (1-1/2 by 3-1/2 inches).
- B. At interior doors, provide auto flush bolts less bottom bolt, unless otherwise specified, except at wood pairs with fire-rating greater than 20 minutes; provide fire pins as required by auto flush bolt and door fire labels.

## **2.16 DOOR PULLS**

- A. Conform to ANSI A156.6. Pull plate 90 mm by 350 mm (3-1/2 inches by 14 inches), unless otherwise specified. Cut plates of door pulls for cylinders, or turn pieces where required.

## **2.17 PUSH PLATES**

- A. Conform to ANSI A156.6. Metal, Type J302, 200 mm (8 inches) wide by 350 mm (14 inches) high. Provide metal Type J300 plates 100 mm (4 inches wide by 350 mm (14 inches) high) where push plates are specified for doors with stiles less than 200 mm (8 inches) wide. Cut plates for cylinders, and turn pieces where required.

## **2.18 COMBINATION PUSH AND PULL PLATES**

- A. Conform to ANSI 156.6. Type J303, stainless steel 3 mm (1/8 inch) thick, 80 mm (3-1/3 inches) wide by 800 mm (16 inches) high, top and bottom edges shall be rounded. Secure plates to wood doors with 38 mm (1-1/2 inch) long No. 12 wood screws. Cut plates for turn pieces, and cylinders where required. Pull shall be mounted down.

## **2.19 COORDINATORS**

- A. Conform to ANSI A156.16. Coordinators, when specified for fire doors, shall comply with Underwriters Laboratories, Inc., requirements for fire door hardware. Coordinator may be omitted on exterior pairs of doors where either door will close independently regardless of the position of the other door. Coordinator may be omitted on interior pairs of non-labeled open where open back strike is used. Open back strike shall not be used on labeled doors. Paint coordinators to match door frames, unless coordinators are plated. Provide bar type coordinators, except where gravity coordinators are required at acoustic pairs. For bar type coordinators, provide filler bars for full width and, as required, brackets for push-side surface mounted closers, overhead stops, and vertical rod panic strikes.

## **2.20 THRESHOLDS**

- A. Conform to ANSI A156.21, mill finish extruded aluminum, except as otherwise specified. In existing construction, thresholds shall be installed in a bed of sealant with 1/4-20 stainless steel machine screws and expansion shields. In new construction, embed aluminum anchors coated with epoxy in concrete to secure thresholds. Furnish thresholds for the full width of the openings.
- B. For thresholds at elevators entrances see other sections of specifications.

- C. At exterior doors and any interior doors exposed to moisture, provide threshold with non-slip abrasive finish.
- D. Provide with miter returns where threshold extends more than 12 mm (0.5 inch) from frame face.

## **2.21 AUTOMATIC DOOR BOTTOM SEAL AND RUBBER GASKET FOR LIGHT PROOF OR SOUND CONTROL DOORS**

- A. Conform to ANSI A156.22. Provide mortise or under-door type, except where not practical. For mortise automatic door bottoms, provide type specific for door construction (wood or metal).

## **2.22 WEATHERSTRIPS (FOR EXTERIOR DOORS)**

- A. Conform to ANSI A156.22. Air leakage shall not to exceed 0.50 CFM per foot of crack length (0.000774m<sup>3</sup>/s/m).

## **2.23 MISCELLANEOUS HARDWARE**

- A. Access Doors (including Sheet Metal, Screen and Woven Wire Mesh Types): Except for fire-rated doors and doors to Temperature Control Cabinets, equip each single or double metal access door with Lock Type E76213, conforming to ANSI A156.5. Key locks as directed. Ship lock prepaid to the door manufacturer. Hinges shall be provided by door manufacturer.
- B. Cylinders for Various Partitions and Doors: Key cylinders same as entrance doors of area in which partitions and door occur, except as otherwise specified. Provide cylinders to operate locking devices where specified for following partitions and doors:
  - 1. Wicket door (in roll-up door assemblies).
  - 2. Fire-rated access doors-Engineer's key set.
  - 3. Overhead Doors
- C. Mutes: Conform to ANSI A156.16. Provide door mutes or door silencers Type L03011 or L03021, depending on frame material, of white or light gray color, on each steel or wood door frame, except at fire-rated frames, lead-lined frames and frames for sound-resistant, lightproof and electromagnetically shielded doors. Furnish 3 mutes for single doors and 2 mutes for each pair of doors, except double-acting doors. Provide 4 mutes or silencers for frames for each Dutch type door. Provide 2 mutes for each edge of sliding door which would contact door frame.
- D. Rain Drip: mill finish extruded aluminum.
- E. Sweep strips shall be similar to Reese 964, extruded aluminum frame with 7/8" nylon brush insert.
- F. Gasketing: Provide gasketing at all labeled doors.
- G. Astragals: Provide astragals on to the outside of active leaf
- H. Threshold and weatherstripping manufacturers:

|              | <b>Reese</b> | <b>Pemko</b> | <b>Nat'l GRD</b> | <b>Seal-Eze</b> |
|--------------|--------------|--------------|------------------|-----------------|
| Threshold    | S425         | 171S         | 425E             |                 |
| Sweep        | 964          | 18D61        | C607A            | D480            |
| Rain Drip    | R201         | 346          | 16A              |                 |
| Gasket       | F797         | PK55D        | 9090             |                 |
| Weatherstrip | 755          | 2891APK      | 700N             |                 |
| Astragals    | 964          | 18061        | A605             | A180            |

## 2.24 PADLOCKS FOR VARIOUS DOORS, GATES AND HATCHES

- A. ASTM E883, size 50 mm (2 inch) wide chain; furnish extended shackles as required by job conditions. Provide padlocks, with key cylinders, for each door in following areas as noted.
- B. Key padlocks as follows:
  - 1. All Refrigerator Rooms in Main Kitchen Department: Kitchen Storage Set.
  - 2. Chain Link Fence Gates for Electrical Substation and other Fenced Buildings or Areas: Engineer's set, except as otherwise specified.
  - 3. Chain Link Fence Gates for Oxygen Storage Buildings: Maintenance supply set.
  - 4. Roof Access and Scuttles: Engineer's set.
- C. Omit padlocks on communicating refrigerator doors.

## 2.25 THERMOSTATIC TEMPERATURE CONTROL VALVE CABINETS

- A. Where lock is shown, equip each cabinet door (metal) with lock Type E06213, conforming to ANSI A156.5. Key locks in Key Sets approved by Contracting Officer. See mechanical drawings and specifications for location of cabinets.
- B. Cabinet manufacturer shall supply the hinges, bolts and pulls. Ship locks to cabinet manufacturer for installation.

## 2.26 FINISHES

- A. Exposed surfaces of hardware shall have ANSI A156.18, finishes as specified below. Finishes on all hinges, pivots, closers, thresholds, etc., shall be as specified below under "Miscellaneous Finishes." For field painting (final coat) of ferrous hardware, see Section 09 91 00, PAINTING.
- B. 626 or 630: All surfaces on exterior and interior of buildings, except where other finishes are specified.
- C. Miscellaneous Finishes:
  - 1. Hinges --exterior doors: 626 or 630.
  - 2. Hinges --interior doors: 652 or 630.
  - 3. Pivots: Match door trim.
  - 4. Door Closers: Factory applied paint finish. Dull or Satin Aluminum color.
  - 5. Thresholds: Mill finish aluminum.
  - 6. Cover plates for floor hinges and pivots: 630.
  - 7. Other primed steel hardware: 600.
- D. Hardware Finishes for Existing Buildings: U.S. Standard finishes shall match finishes of hardware in (similar) existing spaces except where otherwise specified.
- E. Special Finish: Exposed surfaces of hardware for dark bronze anodized aluminum doors shall have oxidized oil rubbed bronze finish (dark bronze) finish on door closers shall closely match doors.
- F. Anti-microbial Coating: All hand-operated hardware (levers, pulls, push bars, push plates, paddles, and panic bars) shall be provided with an anti-microbial/anti-fungal coating that has passed ASTM E2180 tests. Coating to consist of ionic silver (Ag<sup>+</sup>). Silver ions surround bacterial cells, inhibiting growth of bacteria, mold, and mildew by blockading food and respiration supplies.

## 2.27 BASE METALS

- A. Apply specified U.S. Standard finishes on different base metals as following:

| Finish | Base Metal      |
|--------|-----------------|
| 652    | Steel           |
| 626    | Brass or bronze |
| 630    | Stainless steel |

## PART 3 - EXECUTION

### 3.1 HARDWARE HEIGHTS

- A. For new construction locate hardware on doors at heights specified per detail B7 on AS-56, unless otherwise noted.
- B. Hardware Heights from Finished Floor:
1. Exit devices centerline of strike (where applicable) 1024 mm (40-5/16 inches).
  2. Locksets and latch sets centerline of strike 1024 mm (40-5/16 inches).
  3. Deadlocks centerline of strike 1219 mm (48 inches).
  4. Hospital arm pull 1168 mm (46 inches) to centerline of bottom supporting bracket.
  5. Centerline of door pulls to be 1016 mm (40 inches).
  6. Push plates and push-pull shall be 1270 mm (50 inches) to top of plate.
  7. Push-pull latch to be 1024 mm (40-5/16 inches) to centerline of strike.
  8. Locate other hardware at standard commercial heights. Locate push and pull plates to prevent conflict with other hardware.

### 3.2 INSTALLATION

- A. Closer devices, including those with hold-open features, shall be equipped and mounted to provide maximum door opening permitted by building construction or equipment. Closers shall be mounted on side of door inside rooms, inside stairs, and away from corridors. At exterior doors, closers shall be mounted on interior side. Where closers are mounted on doors they shall be mounted with sex nuts and bolts; foot shall be fastened to frame with machine screws.

- B. Hinge Size Requirements:

| Door Thickness                              | Door Width  | Hinge Height          |
|---|---|-----------------------|
| 45 mm (1-3/4 inch)                          | 900 mm (3 feet) and less                                | 113 mm (4-1/2 inches) |
| 45 mm (1-3/4 inch)                          | Over 900 mm (3 feet) but not more than 1200 mm (4 feet) | 125 mm (5 inches)     |
| 35 mm (1-3/8 inch) (hollow core wood doors) | Not over 1200 mm (4 feet)                               | 113 mm (4-1/2 inches) |

- C. Hinge leaves shall be sufficiently wide to allow doors to swing clear of door frame trim and surrounding conditions.
- D. Where new hinges are specified for new doors in existing frames or existing doors in new frames, sizes of new hinges shall match sizes of existing hinges; or, contractor may reuse existing hinges provided hinges are restored to satisfactory operating condition as approved by COR. Existing hinges shall not be reused on door openings having new doors and new frames. Coordinate preparation for hinge cut-outs and screw-hole locations on doors and frames.

- E. Hinges Required Per Door:

|  |         |
|--|---------|
| Doors 1500 mm (5 ft) or less in height                               | 2 butts |
| Doors over 1500 mm (5 ft) high and not over 2280 mm (7 ft 6 in) high | 3 butts |
| Doors over 2280 mm (7 feet 6 inches) high                            | 4 butts |
| Dutch type doors   | 4 butts |
| Doors with spring hinges 1370 mm (4 feet 6 inches) high or less      | 2 butts |
| Doors with spring hinges over 1370 mm (4 feet 6 inches)              | 3 butts |

- F. Fastenings: Suitable size and type and shall harmonize with hardware as to material and finish. Provide machine screws and lead expansion shields to secure hardware to concrete, ceramic or quarry floor tile, or solid masonry. Fiber or rawl plugs and adhesives are not permitted. All fastenings exposed to weather shall be of nonferrous metal.

- G. After all hardware has been installed; notify COR that hardware is complete and ready for permanent cores to be installed by VA locksmith. (All keys, Master Key level and above shall be sent Registered Mail to the Health Care System Director along with the bitting list. Also a copy of the invoice shall be sent to the COR for his records.) Installation of locks which do not meet specified keying requirements shall be considered sufficient justification for rejection and replacement of all locks installed on project.

### 3.3 FINAL INSPECTION

- A. Installer to provide letter to VA COR that upon completion, installer has visited the Project and has accomplished the following:
1. Re-adjust hardware.
  2. Evaluate maintenance procedures and recommend changes or additions, and instruct VA personnel.
  3. Identify items that have deteriorated or failed.
  4. Submit written report identifying problems.

### 3.4 DEMONSTRATION

- A. Demonstrate efficacy of mechanical hardware and electrical and electronic hardware systems, including adjustment and maintenance procedures, to satisfaction of and VA Locksmith.

### 3.5 HARDWARE SETS

- A. Following sets of hardware correspond to hardware symbols shown on drawings. Only those hardware sets that are shown on drawings will be required. Disregard hardware sets listed in specifications but not shown on drawings.

#### ELECTRIC HARDWARE ABBREVIATIONS LEGEND:

ADO = Automatic Door Operator

EMCH = Electro-Mechanical Closer-Holder

MHO = Magnetic Hold-Open (wall- or floor-mounted)

#### B. INTERIOR SINGLE DOORS

##### 1. HW-1

Each Door to Have: NON-RATED

|                                |                                  |
|--------------------------------|----------------------------------|
| Hinges                         | QUANTITY & TYPE AS REQUIRED      |
| 1 Latchset                     | F01                              |
| 1 Kick Plate                   | J102                             |
| 1 Mop Plate (@ Inswing Doors)  | J102                             |
| 1 Closer                       | C02011/C02021 (PT4D, PT4F, PT4H) |
| 1 Wall Stop (@ Outswing Doors) | L52101 CONVEX                    |
| 3 Silencers                    | L03011                           |

##### 2. HW-1L

Each Door to Have: NON-RATED

|                            |                     |
|----------------------------|---------------------|
| 1 Continuous Hinge         | A51031B             |
| 1 Latchset                 | F01                 |
| 1 Kick Plate               | J102                |
| 1 Overhead Stop            | C01541-ADJUSTABLE   |
| 1 Auto Door Bottom         | R0Y346 – HEAVY DUTY |
| 2 Sets Self-Adhesive Seals | R0E154              |

3. HW-1R  
Each Door to Have: RATED  
  
Hinge Quantity and type as required  
1 Latchset F01  
1 Kick Plate J102  
1 Closer (@ rated doors) C02011/C02021 (PT4D, PT4F, PT4H)  
1 Wall Stop L52101 CONVEX  
1 Set Self-Adhesive Seals R0E154  
1 Set Auto Flush Bolts TYPE 25 LESS BPTTOM BOLT
  
4. HW-2B  
Each Door to Have: NON-RATED  
  
1 Center Pivot Set C07042  
1 Privacy Lock F02-MOD x THUMBTURN BOTH SIDES  
X OCCUPANCY INDICATOR  
1 Rescue Stop ES-1 (STANLEY), OR EQUAL  
1 Custom Rescue Strike CUSTOM DOUBLE-LIPPED (TICE), OR  
EQUAL  
1 Kick Plate J102  
1 Mop Plate (@ Inswing Doors) J102  
1 Wall Stop L52101 CONVEX  
STONE THRESHOLD BY OTHER TRADES.
  
5. HW-3D  
Each Door to Have: RATED  
  
Hinges QUANTITY & TYPE AS REQUIRED  
1 Office Lock F04  
1 Closer C02011/C02021 (PT4D, PT4F, PT4H)  
1 Kick Plate J102  
1 Wall Stop L52101 CONVEX  
1 Threshold J32300 x 57 MM WIDTH (2-1/4 INCHES)  
1 Auto Door Bottom R0Y346 – HEAVY DUTY  
2 Sets Self-Adhesive Seals R0E154

6. HW-3E  
Each Door to Have: NON-RATED
- Hinges QUANTITY & TYPE AS REQUIRED  
1 Office Lock F04  
1 Closer C02051/C02061 (PT4D, PT4H)  
1 Wall Stop L52101 CONVEX  
1 Set Self-Adhesive Seals R0E154  
1 Coat Hook L03121  
OMIT COAT HOOK WHERE GLASS LITE PREVENTS INSTALLATION.
7. HW-3G  
Each Door to Have: NON-RATED
- Hinges QUANTITY & TYPE AS REQUIRED  
1 Office Lock F04  
1 Closer C02051/C02061 (PT4D, PT4H)  
1 Wall Stop L52101 CONVEX  
1 Coat Hook L03121  
1 Auto Door Bottom R0Y346 – HEAVY DUTY  
2 Sets Self-Adhesive Seals R0E154  
OMIT VIEWER IF DOOR PROVIDED WITH VISION LITE.  
OMIT COAT HOOK WHERE GLASS LITE PREVENTS INSTALLATION.
8. HW-4  
Each Door to Have: NON-RATED
- Hinges QUANTITY & TYPE AS REQUIRED  
1 Classroom Lock F08  
1 Overhead Stop C04541  
3 Silencers L03011
9. HW-4D  
Each Door to Have: RATED
- 1 Continuous Hinge A51031B x INTEGRAL HINGE GUARD  
CHANNEL X ADJUSTA-SCREWS  
1 Classroom Lock F08  
1 Closer C02011/C02021 (PT4D, PT4F, PT4H)  
1 Armor Plate J101 x 1.275 MM (0.050 INCH)  
THICKNESS  
1 Mop Plate (@ Inswing Doors) J102



|                                |  |
|--------------------------------|--|
| 1 Edge Guard (@ Wood Doors)    | J208M / J211 (VERIFY), CUT:  |
| 1 Wall Stop (@ Inswing Doors)  | HARDWARE   |
| 1 Overhead Stop                | L52101 CONVEX  |
| 1 Set Self-Adhesive Seals      | C01541-ADJUSTABLE  |
|                                | R0E154   |
| 10. HW-5                       |  |
| Each Door to Have:             | RATED  |
| Hinges                         | QUANTITY & TYPE AS REQUIRED  |
| 1 Storeroom Lock               | F07  |
| 1 Closer                       | C02011/C02021 (PT4D, PT4F, PT4H)                                       |
| 1 Kick Plate                   | J102 (@ STORAGE, EVM, & HAC ROOMS ONLY)                                |
| 1 Mop Plate (@ Inswing Doors)  | J102 @ LOCKER ROOMS ONLY   |
| 1 Wall Stop                    | L52101 CONVEXL02121  |
| 1 Set Self-Adhesive Seals      | R0E154   |
| 11. HW-5D                      |  |
| Each Door to Have:             | NON-RATED  |
| Hinges                         | QUANTITY & TYPE AS REQUIRED  |
| 1 Storeroom Lock               | F07  |
| 1 Kick Plate                   | J102 (@ STORAGE, EVM, & HAC ROOMS ONLY)                                |
| 1 Wall Stop (@ Outswing Doors) | L52101 CONVEX  |
| 3 Silencers                    | L03011   |
| 12. HW-5G                      |  |
| Each Door to Have:             | NON-RATED  |
| Hinges                         | QUANTITY & TYPE AS REQUIRED  |
| 1 Storeroom Lock               | F07  |
| 1 Kick Plate                   | J102   |
| 1 Wall Stop (@ Outswing Doors) | L52101 CONVEX  |
| 2 Sets Self-Adhesive Seals     | R0E154   |
| 13. HW-6A                      |  |
| Each Door to Have:             | RATED  |
| 1 Continuous Hinge             | A51031B x INTEGRAL HINGE GUARD CHANNEL X HOSPITAL TIP X ADJUSTA-SCREWS |
| 1 Exit Device                  | TYPE 1 F08 LEVER/ F01@ STAIR ENCLOSURES                                |
| 1 Key Cylinder                 | TYPE AS REQUIRED   |

|   |  |
|---|--|
| 1 Closer  | C02011/C02021 (PT4D, PT4F, PT4H)   |
| 1 Kick Plate  | J102   |
| 1 Edge Guard (@ Wood Doors)   | J208M / J211 (VERIFY), CUT:<br>HARDWARE  |
| 1 Wall Stop   | L52101 CONVEX  |
| 1 Set Self-Adhesive Seals   | R0E154   |
| 14. HW-6F   |  |
| Each [ADO] Door to Have:  | NON-RATED/RATED  |
| 1 Continuous Hinge  | A51031B x INTEGRAL HINGE GUARD<br>CHANNEL X ADJUSTA-SCREWS x 8-<br>THRUWIRE TRANSFER X IN-HINGE<br>ACCESS PANELS |
| 1 Elec. Exit Device   | TYPE 1 F08 LEVER (E04)   |
| 1 Key Cylinder  | TYPE AS REQUIRED   |
| 1 Power Supply  | BY EXIT DEVICE MFR. FOR E04<br>FUNCTION  |
| 1 Armor Plate   | J101 x 1.275 MM (0.050 INCH)<br>THICKNESS  |
| 1 Edge Guard (@ Wood Doors)   | J208M / J211 (VERIFY), CUT:<br>HARDWARE  |
| 1 Wall Stop (@ Inswing Doors)   | L52101 CONVEX  |
| 1 Set Self-Adhesive Seals   | R0E154   |
| POWER TRANSFER SHARED BY ELECTRIC PANIC AND RE-ACTIVATION<br>SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).<br>AUTO DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13. |  |

#### C. INTERIOR PAIRS OF DOORS

1. HW-8D
 

Each [ADO] Aluminum Storefront Pair to Have: NON-RATED

|                                |   |
|--------------------------------|---|
| 2 Pivot Sets                   | C07162  |
| 2 Intermediate Transfer Pivots | C07321 x 4-WIRES                              |
| 2 Intermediate Pivots          | C07321  |
| 2 Push/Pull Bar Sets           | J505 – 305 MM (12 INCH) CENTER-TO-CENTER PULL |
| 2 Overhead Stops               | C01541-ADJUSTABLE                             |

AUTO DOOR OPERATORS, CONTROLS, AND REACTIVATION SENSORS BY SECTION 08 71 13.  
POWER TRANSFERS FOR RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).  
120VAC POWER, CONDUIT, AND WIRING BY DIVISION 26.
2. HW-10
 

Each Pair to Have: RATED

- |   |   |
|---|---|
| 2 Continuous Hinges   | A51031B x INTEGRAL HINGE GUARD<br>CHANNEL X ADJUSTA-SCREWS<br>TYPE 25 LESS BOTTOM BOLT<br>F08<br>TYPE 21A<br>R5Y634 x R0E154 x THRU-BOLTS |
| 1 Set Auto Flush Bolts  |   |
| 1 Classroom Lock  |   |
| 1 Coordinator   |   |
| 1 Overlapping Astragal with<br>Self-Adhesive Seal                                     |   |
| 2 Closers   | C02011/C02021 (PT4D, PT4F, PT4H)  |
| 2 Heavy-Duty Armor Plates   | J101 x 3.175 MM (0.125 INCH)<br>THICKNESS   |
| 1 Lock Trim Protector Bar   | R111LPB-630 (ROCKWOOD), OR<br>EQUAL   |
| 2 Edge Guard (@ Wood Doors)   | J208M / J211 (VERIFY), CUT:<br>HARDWARE   |
| 2 Wall Stops  | L52101 CONVEX   |
| 1 Threshold   | J32300 x 57 MM WIDTH (2-1/4 INCHES)   |
| 2 Auto Door Bottoms   | R0Y346 – HEAVY DUTY   |
| 2 Set Self-Adhesive Seals   | R0E154  |
| INSTALL LOCK TRIM PROTECTOR BAR ON PUSH SIDE OF ACTIVE LEAF TO<br>PROTECT LEVER TRIM. |   |
3. HW-10C
- |                    |           |
|--------------------|-----------|
| Each Pair to Have: | NON-RATED |
|--------------------|-----------|
- |   |   |
|---|---|
| 2 Continuous Hinges                               | A51031B x INTEGRAL HINGE GUARD<br>CHANNEL X ADJUSTA-SCREWS<br>TYPE 25 LESS BOTTOM BOLT<br>F09<br>R5Y634 x R0E154 x THRU-BOLTS |
| 1 Set Auto Flush Bolts                            |   |
| 1 Utility Lock                                    |   |
| 1 Overlapping Astragal with<br>Self-Adhesive Seal |   |
| 2 Kick Plates                                     | J102  |
| 1 Edge Guard (@ Wood Doors)                       | J208M / J211 (VERIFY), CUT:<br>HARDWARE   |
| 2 Wall Stop (@ Inswing Doors)                     | L52101 CONVEX   |
| 1 Set Self-Adhesive Seals                         | R0E154  |
4. HW-10K
- |                          |                 |
|--------------------------|-----------------|
| Each [ADO] Pair to Have: | RATED/NON-RATED |
|--------------------------|-----------------|
- |                             |   |
|-----------------------------|---|
| 1 Continuous Transfer Hinge | A51031B x INTEGRAL HINGE GUARD<br>CHANNEL X ADJUSTA-SCREWS x 8-<br>THRUWIRE TRANSFER X IN-HINGE<br>ACCESS PANEL |
|-----------------------------|---|

|   |   |
|---|---|
| 1 Continuous Transfer Hinge   | A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS x 4-THRUWIRE TRANSFER X IN-HINGE ACCESS PANEL |
| 1 Set Auto Flush Bolts  | TYPE 25 LESS BOTTOM BOLT  |
| 1 Classroom Lock  | F08   |
| 1 Electric Unlatch Strike   | MUNL (FAIL-SECURE), 24VDC (SECURITRON), OR EQUAL  |
| 1 Power Supply  | Regulated, Filtered, 24VDC, Amperage as required  |
| 1 Coordinator   | TYPE 21A  |
| 1 Overlapping Astragal with Self-Adhesive Seal  | R5Y634 x R0E154 x THRU-BOLTS  |
| 2 Armor Plates  | J101 x 1.275 MM (0.050 INCH) THICKNESS  |
| 2 Edge Guard (@ Wood Doors)   | J208M / J211 (VERIFY), CUT: HARDWARE  |
| 2 Wall Stops  | L52101 CONVEX   |
| 1 Set Self-Adhesive Seals   | R0E154  |
| AUTOMATIC DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13, AUTOMATIC DOOR OPERATORS. POWER TRANSFER SHARED BY ELECTRIC STRIKE AND RE-ACTIVATION SENSOR WIRING (RE-ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13). |   |
| *AT WOOD PAIRS RATED 45-MINUTES OR MORE, PROVIDE ELECTRIC STRIKE 310-2-3/4 (FOLGER ADAM OR EQUAL) IN LIEU OF SPECIFIC UNLATCH STRIKE.   |   |

|  |                                  |
|--|----------------------------------|
| 5. HW-11                                       |                                  |
| Each Pair to Have:                             | RATED                            |
| Hinges   | QUANTITY & TYPE AS REQUIRED      |
| 1 Set Auto Flush Bolts                         | TYPE 25 LESS BOTTOM BOLT         |
| 1 Storeroom Lock                               | F07                              |
| 1 Coordinator                                  | TYPE 21A                         |
| 1 Overlapping Astragal with Self-Adhesive Seal | R5Y634 x R0E154 x THRU-BOLTS     |
| 2 Closers                                      | C02011/C02021 (PT4D, PT4F, PT4H) |
| 2 Kick Plates                                  | J102 (@ STORAGE ROOMS ONLY)      |
| 2 Wall Stops                                   | L52101 CONVEX                    |
| 1 Set Self-Adhesive Seals                      | R0E154                           |

6. HW-11A

|  |   |
|--|---|
| Each Pair to Have:                             | NON-RATED   |
| 2 Continuous Hinges                            | A51031B x INTEGRAL HINGE GUARD CHANNEL X ADJUSTA-SCREWS             |
| 1 Set Auto Flush Bolts                         | TYPE 25   |
| 1 Security Storeroom Lock                      | F13-MOD x RIGID OUTSIDE LEVER x KEY RETRACTS DEADBOLT AND LATCHBOLT |
| 1 Overlapping Astragal with Self-Adhesive Seal | R5Y634 x R0E154 x THRU-BOLTS  |
| 2 Armor Plates                                 | J101 x 1.275 MM (0.050 INCH) THICKNESS                              |
| 2 Edge Guard (@ Wood Doors)                    | J208M / J211 (VERIFY), CUT: HARDWARE                                |
| 2 Wall Stops                                   | L52101 CONVEX   |
| 1 Set Self-Adhesive Seals                      | R0E154  |

7. HW-12C

Each [MHO] Double Egress Doors to Have: RATED

|   |                                      |
|---|--------------------------------------|
| Hinges  | QUANTITY & TYPE AS REQUIRED          |
| 1 Exit Device   | Q2331 x TYPE 8 EXIT DEVICES (F01)    |
| 1 Exit Device   | Q2331 x TYPE 8 EXIT DEVICES (F01)    |
| 1 Overlapping Astragal with Self-Adhesive Seal                    | R5Y634 x R0E154 x THRU-BOLTS         |
| 2 Closers   | C02011/C02021 (PT4D, PT4H)           |
| 2 Magnetic Holders  | C00011 TRI-VOLTAGE                   |
| 2 Edge Guard (@ Wood Doors)                                       | J208M / J211 (VERIFY), CUT: HARDWARE |
| 1 Set Self-Adhesive Seals   | R0E154                               |
| POWER, WIRING, CONDUIT, AND FIRE ALARM CONNECTION BY DIVISION 26. |                                      |

8. HW-12E

Each Pair to Have: RATED

|                               |  |
|-------------------------------|--|
| 2 Continuous Hinges           | A51031B x INTEGRAL HINGE GUARD CHANNEL X HOSPITAL TIP X ADJUSTA-SCREWS |
| 1 Exit Device                 | TYPE 7 or 8 F01  |
| 1 Exit Device                 | TYPE 7 or 8 F08 LEVER  |
| 1 Key Cylinder                | TYPE AS REQUIRED   |
| 1 Set Meeting Stile Astragals | R3E834   |
| 2 Closers                     | C02011/C02021 (PT4D, PT4F, PT4H)                                       |
| 2 Kick Plates                 | J102   |
| 2 Edge Guard (@ Wood Doors)   | J208M / J211 (VERIFY), CUT: HARDWARE                                   |
| 2 Wall Stop (@ Inswing Doors) | L52101 CONVEX  |
| 2 Door Bottom                 | R0Y434 x NYLON BRUSH INSERT  |

|   |   |
|---|---|
| 2 Set Self-Adhesive Seals                         | R0E154  |
| 9. HW-12H   |   |
| Each [ADO] Pair to Have:                          | NON-RATED   |
| 2 Continuous Transfer Hinge                       | A51031B x INTEGRAL HINGE GUARD<br>CHANNEL X ADJUSTA-SCREWS x 8-<br>THRUWIRE TRANSFER X IN-HINGE<br>ACCESS PANEL   |
| 1 Elec. Exit Device                               | TYPE 7 or 8 F01 (E04)   |
| 1 Elec. Exit Device                               | TYPE 7 or 8 F08 LEVER (E04)   |
| 1 Key Cylinder                                    | TYPE AS REQUIRED  |
| 1 Power Supply                                    | BY EXIT DEVICE MFR. FOR E04<br>FUNCTION   |
| 1 Overlapping Astragal with<br>Self-Adhesive Seal | R5Y634 x R0E154 x THRU-BOLTS  |
| 2 Kick Plates                                     | J102  |
| 2 Edge Guard (@ Wood Doors)                       | J208M / J211 (VERIFY), CUT:<br>HARDWARE   |
| 1 Threshold (outswing door)                       | J35130 x SILICONE GASKET  |
| 1 Threshold (inswing door)                        | ALUMINUM, PER ARCHITECTURAL<br>DETAIL   |
| 2 Door Sweep                                      | 90100CNB (PEMKO), OR EQUAL  |
| 1 Set Frame Seals                                 | 2891AS X CSK SCREWS (PEMKO), OR<br>EQUAL  |
| 1 Drip  | R0Y976 POWER TRANSFERS<br>SHARED BY ELECTRIC PANIC AND RE-ACTIVATION SENSOR WIRING (RE-<br>ACTIVATION SENSORS PROVIDED BY SECTION 08 71 13).<br>AUTO DOOR OPERATORS AND CONTROLS BY SECTION 08 71 13. |

#### D. EXTERIOR SINGLE DOORS

|                    |                             |
|--------------------|-----------------------------|
| 1. HW-E4           |                             |
| Each Door to Have: | NON-RATED                   |
| 1 Continuous Hinge | A51031B                     |
| 1 Anti-Vandal Pull | 1097HASP (TRIMCO), OR EQUAL |
| 1 Exit Device      | TYPE 1 F03 LES TRIM         |
| 1 Key Cylinder     | TYPE AS REQUIRED            |
| 1 Closer           | C02011 (PT4D, PT4F, PT4H)   |
| 1 Kick Plate       | J102                        |
| 1 Wall Stop        | L52101 CONVEX               |
| 1 Threshold        | J35130 x SILICONE GASKET    |
| 1 Door Sweep       | 90100CNB (PEMKO), OR EQUAL  |

|                               |  |
|-------------------------------|--|
| 1 Set Frame Seals             | 2891AS X CSK SCREWS (PEMKO), OR<br>EQUAL |
| 1 Drip                        | R0Y976                                   |
| PROVIDE CARD READER @ ST1NB   |  |
| PROVIDE DELAYED EGRESS @ 102A |  |

E. EXTERIOR PAIRS OF DOORS

- |   |   |
|---|---|
| 1. HW-E8  |   |
| Each Pair to Have:                                | NON-RATED   |
| 2 Continuous Hinge                                | A51031B   |
| 1 Set Auto Flush Bolts                            | TYPE 25   |
| 1 Dust Proof Strike                               | L04021  |
| 1 Storeroom Lock                                  | F13-MOD x RIGID OUTSIDE LEVER x<br>KEY RETRACTS DEADBOLT AND<br>LATCHBOLT                         |
| 1 Overlapping Astragal with<br>Self-Adhesive Seal | R5Y634 x R0E154 x THRU-BOLTS  |
| 1 Coordinator                                     | TYPE 21A  |
| 2 Closer  | C02051/C02061C02011/C02021 (PT4D,<br>PT4F, PT4H)  |
| 2 Armor Plate                                     | J101 x 3.125 MM (0.125 INCH)<br>THICKNESS   |
| 1 Threshold (outswing door)                       | J35130 x SILICONE GASKET  |
| 1 Threshold (inswing door)                        | ALUMINUM, PER ARCHITECTURAL<br>DETAIL   |
| 2 Door Sweep                                      | 90100CNB (PEMKO), OR EQUAL  |
| 1 Set Frame Seals                                 | 2891AS X CSK SCREWS (PEMKO), OR<br>EQUAL  |
| 1 Drip  | R0Y976  |
| 1. HW-G4  |   |
| Each Gate to Have:                                | NON-RATED   |
| 2 Weldable Gate Hinges                            | I-8513 X WELDED OR FASTENED X<br>SHEAR HINGE LEAVES TO FIT GATE<br>MEMBERS (BROOKFIELD), OR EQUAL |
| 1 Weldable Panic Box                              | K-BXED X TYPE TO FIT LOCK<br>BRAND/MODEL (KEEDEX), OR EQUAL                                       |
| 1 Anti-Vandal Pull                                | 1097HASP (TRIMCO), OR EQUAL   |
| 1 Rim Panic Device                                | TYPE 1 F03 LESS TRIM  |
| 1 Cylinder  | TYPE AS REQUIRED  |
| 1 Stainless Steel Closer                          | C52011/C22021 (PT4D, PT4F, PT4H)  |

**SECURITY HARDWARE ABBREVIATIONS LEGEND:**

AC = Access Control Device (Card reader, biometric reader, keypad, etc.)

ADO = Automatic Door Operator

DEML = Delayed Egress Magnetic Lock

DEPH = Delayed Egress Panic Exit Device

DPS = Door Position Switch (Door or Alarm Contact)

EL = Electric Lock or Electric Lever Exit Device

PB = Push-button Combination Lock (stand-alone)

RR = Remote Release Button

ELR = Electric Latch Retraction Exit Device

REX = Request-to-Exit Switch in Latching Device Inside Trim

**G. INTERIOR SINGLE SECURITY DOORS**

**1. HW-SH-3C**

Each [PB] Door to Have:

NON-RATED/RATED

1 Continuous Hinge

A51031B x INTEGRAL HINGE GUARD  
CHANNEL X ADJUSTA-SCREWS

1 Push-button Combination Lock

N3 – A156.13 F07 G1 E06

1 Closer

C02011/C02021 (PT4D, PT4F, PT4H)

1 Armor Plate

J101 x 1.275 MM (0.050 INCH)  
THICKNESS

1 Edge Guard (@ Wood Doors)

J208M / J211 (VERIFY), CUT:  
HARDWARE

1 Overhead Stop

C01541-ADJUSTABLE

1 Set Self-Adhesive Seals

R0E154

**END OF SECTION**